CHAPTER 11.4.

**BOVINE SPONGIFORM ENCEPHALOPATHY**

Article 11.4.1.

**General provisions ~~and safe commodities~~**

1) The recommendations in this chapter are intended to ~~manage~~ mitigate the human and animal health risks associated with the presence of the bovine spongiform encephalopathy (BSE) agents in cattle ~~(~~*~~Bos taurus~~*~~and~~*~~B. indicus~~*~~)~~ only. BSE manifests in two main forms: classical BSE and atypical BSE. Oral exposure to contaminated *feed* is the main route of transmission of classical BSE. Atypical BSE is a condition that occurs at a very low rate and is assumed to occur spontaneously in any cattle population. Cattle have been experimentally infected by the oral route with a low molecular weight type of atypical BSE (L-type BSE). Therefore atypical BSE is also considered capable of being recycled in a cattle population if cattle are orally exposed to contaminated *feed*. ~~For the purposes of official BSE risk status recognition, BSE excludes 'atypical BSE' as a condition believed to occur spontaneously in all cattle populations at a very low rate.~~

2) BSE primarily affects cattle. Other animal species may be naturally and experimentally susceptible to BSE, but they are not regarded as being epidemiologically significant, particularly when feeding ruminants with ruminant-derived *protein meal* is not practised.

3) For the purposes of the *Terrestrial Code*:

a) BSE is an invariably fatal neurological prion disease of cattle caused by a misfolded form of the prion protein (PrPSc) which includes both classical (C-type BSE) and atypical strains (H- and L-type BSE having, respectively, a PrPSc fragment of higher and lower molecular mass than classical BSE). The term ‘BSE’ includes both classical and atypical forms.

b) The occurrence of a BSE *case* is defined by the immunohistochemical (IHC) or immunochemical detection of PrPSc in brain tissue of a bovid of the species *Bos taurus* or *Bos indicus.* Discrimination between atypical and classical BSE strains is based on the Western immunoblot banding pattern, as described in the *Terrestrial Manual*.

4) For the purposes of this chapter, ‘cattle’ means bovids of the species *Bos taurus* or *Bos indicus.*

~~1)~~ ~~When authorising import or transit of the following~~*~~commodities~~*~~and any products made from these~~*~~commodities~~*~~and containing no other tissues from cattle,~~*~~Veterinary Authorities~~*~~should not require any BSE-related conditions, regardless of the BSE risk status of the cattle population of the~~*~~exporting country~~*~~,~~*~~zone~~*~~or~~*~~compartment~~*~~:~~

~~a)~~ *~~milk~~*~~and~~*~~milk products~~*~~;~~

~~b)~~ ~~semen and~~*~~in vivo~~*~~derived cattle embryos collected and handled in accordance with the recommendations of the International Embryo Transfer Society;~~

~~c)~~ ~~hides and skins;~~

~~d)~~ ~~gelatine and collagen prepared exclusively from hides and skins;~~

~~e)~~ ~~tallow with maximum level of insoluble impurities of 0.15% in weight and derivatives made from this tallow;~~

~~f)~~ ~~dicalcium phosphate (with no trace of protein or fat);~~

~~g)~~ ~~deboned skeletal muscle meat (excluding mechanically separated meat) from cattle which were not subjected to a stunning process prior to~~*~~slaughter~~*~~, with a device injecting compressed air or gas into the cranial cavity or to a pithing process, and which passed ante- and post-mortem inspections and which has been prepared in a manner to avoid contamination with tissues listed in Article 11.4.14.;~~

~~h)~~ ~~blood and blood by-products, from cattle which were not subjected to a stunning process, prior to~~*~~slaughter~~*~~, with a device injecting compressed air or gas into the cranial cavity, or to a pithing process.~~

~~2)~~ ~~When authorising import or transit of other~~*~~commodities~~*~~listed in this chapter,~~*~~Veterinary Authorities~~*~~should require the conditions prescribed in this chapter relevant to the BSE risk status of the cattle population of the~~*~~exporting country~~*~~,~~*~~zone~~*~~or~~*~~compartment~~*~~.~~

~~3~~5) When ~~authorising import of~~*~~commodities~~*~~according to the conditions prescribed in~~ *commodities* are imported in accordance with this chapter, the BSE risk ~~status~~ of ~~an~~ the *importing country* or *zone* of destination is not affected by the BSE risk ~~status~~ of the *exporting country*, *zone* or *compartment* of origin.

6) Standards for diagnostic tests are described in the *Terrestrial Manual*.

Article 11.4.1bis.

**Safe commodities**

When authorising the importation or transit of the following *commodities* derived from cattle, *Veterinary Authorities* should not require any conditions related to BSE, regardless of the BSE risk posed by the cattle population of the *exporting country*, *zone* or *compartment*:

1) *milk* and *milk products*;

2) semen and *in vivo* derived cattle embryos collected and handled in accordance with the relevant chapters of the *Terrestrial Code*;

3) hides and skins;

4) gelatine and collagen;

5) tallow with maximum level of insoluble impurities of 0.15% in weight and derivatives made from this tallow;

6) dicalcium phosphate (with no trace of protein or fat);

7) fetal blood.

Other *commodities* of cattle can be traded safely if in accordance with the relevant articles of this chapter.

Article 11.4.2.

**~~The~~ General criteria for the determination of the BSE risk ~~status of the cattle population~~ of a country, zone or compartment**

Owing to its specific etiological and epidemiological features, ~~T~~the BSE risk ~~status~~ of ~~the cattle population of~~ a country, *zone* or *compartment* ~~should be~~ is determined on the basis of the following criteria:

1) ~~the outcome of a~~ A BSE *risk assessment*, ~~based on~~ in accordance with the provisions of the *~~Terrestrial Code,~~* ‘Application for official recognition by the OIE of risk status for bovine spongiform encephalopathy’ that evaluates the risk of BSE agents being recycled within the cattle population by identifying all potential factors ~~for BSE~~ associated with the occurrence of BSE and their historic perspective. Member Countries should review the *risk assessment* annually to determine whether the situation has changed.

The *risk assessment* for the purpose of BSE, based on the framework provided by Article 2.1.4., consists of:

a) ~~Entry assessment~~ Entry assessment

The ~~E~~entry assessment ~~consists of assessing, through consideration of the following,~~ evaluates the likelihood that the classical BSE agent has ~~either~~ been introduced into the country, *zone* or *compartment* ~~via~~ *~~commodities~~* ~~potentially contaminated with it, or is already present in the country,~~ *~~zone~~* ~~or~~ *~~compartment~~*through the importation of the following *commodities* in the preceding eight years:

i) cattle;

ii) ruminant-derived *protein meal*;

iii) *feed* (except packaged and labelled pet food) that contains ruminant-derived *protein meal*;

iv) fertilisers that contain ruminant-derived *protein meal*;

v) any other *commodity* that either is or could be contaminated by *commodities* listed in Article 11.4.14.

~~i)~~ ~~the presence or absence of the BSE agent in the indigenous ruminant population of the country,~~*~~zone~~*~~or~~*~~compartment~~*~~and, if present, evidence regarding its prevalencecattle;~~

~~ii)~~ ~~production of~~*~~meat-and-bone meal~~*~~or~~*~~greaves~~*~~from the indigenous ruminant population;~~

~~iii)~~ i~~mported~~*~~meat-and-bone meal~~*~~or~~*~~greaves~~*~~;~~

~~iv)~~ ~~imported cattle, sheep and goats;~~

~~v)~~ ~~imported animal~~*~~feed~~*~~and~~*~~feed ingredients~~*~~;~~

~~vi)~~ ~~imported products of ruminant origin for human consumption, which may have contained tissues listed in Article 11.4.14. and may have been fed to cattle;~~

~~vii)~~ ~~imported products of ruminant origin intended for~~*~~in vivo~~*~~use in cattle.~~

~~The results of~~*~~surveillance~~*~~and other epidemiological investigations into the disposition of the~~*~~commodities~~*~~identified above should be taken into account in carrying out the assessment.~~

b) ~~Exposure assessment~~ Exposure assessment

~~If the entry assessment identifies a~~*~~risk~~*~~factor, an~~ The exposure assessment ~~should be conducted, consisting of assessing~~ evaluates the likelihood of cattle being exposed to ~~the~~ BSE ~~agent~~during the preceding eight years, either through imported *commodities* or as a result of the presence of BSE agents within the indigenous cattle population of the country, *zone* or *compartment*.~~through a consideration of the following:~~

~~i)~~ ~~recycling and amplification of the BSE agent through consumption by cattle of~~*~~meat-and-~~*~~bone~~ *~~meal~~*~~or~~*~~greaves~~*~~of ruminant origin, or other~~*~~feed~~*~~or~~*~~feed ingredients~~*~~contaminated with these;~~

~~ii)~~ ~~the use of ruminant carcasses (including from fallen stock), by-products and~~*~~slaughterhouse/abattoir~~*~~waste, the parameters of the rendering processes and the methods of animal~~*~~feed~~*~~manufacture;~~

~~iii)~~ ~~the feeding or not of ruminants with~~*~~meat-and-bone meal~~*~~and~~*~~greaves~~*~~derived from ruminants, including measures to prevent cross-contamination of animal~~*~~feed~~*~~;~~

~~iv)~~ ~~the level of~~*~~surveillance~~*~~for BSE conducted on the cattle population up to that time and the results of that~~*~~surveillance~~*~~;~~

The first step in the exposure assessment involves an evaluation of livestock industry practices through a consideration of the impact of:

i) Livestock industry practices preventing cattle from being fed ruminant-derived *protein meal*, taking account of:

‒ demographics of the cattle population and production and farming systems;

‒ feeding practices;

‒ slaughtering and waste management practices;

‒ rendering practices;

‒ *feed* production, labelling, distribution and storage.

Depending on the outcome from this step, an evaluation of mitigation measures specifically targeting BSE may also need to be included through consideration of the impact of:

ii) Specific risk mitigation measures preventing cattle from being fed ruminant-derived *protein meal*, taking account of:

‒ the nature and scope of a *feed* ban on feeding ruminants with *protein meal* derived from ruminants;

‒ the fate of *commodities* with the greatest BSE infectivity (those *commodities* listed in point 1 of Article 11.4.14.);

‒ parameters of the rendering process;

‒ prevention of cross-contamination during rendering, *feed* production, transport, storage and feeding;

‒ an awareness programme under the scope of the *feed* ban;

‒ monitoring and enforcement of the *feed* ban.

Depending on the outcome of the exposure assessment, a consequence assessment (in point (c) below) may not be required.

c) Consequence assessment

The consequence assessment evaluates the likelihood of cattle becoming infected following exposure to the BSE agents together with the likely extent and duration of any subsequent recycling and amplification within the cattle population during the preceding eight years. The factors to be considered in the consequence assessment are:

i) age at exposure;

ii) production type;

iii) the impact of cattle industry practices or the implementation of BSE-specific mitigation measures under a *feed* ban.

d) Risk estimation

The risk estimation combines the results and conclusions arising from the entry, exposure and consequence assessments to provide an overall measure of the risk of BSE agents being recycled within the cattle population, and to determine the date from which the risk of BSE agents being recycled within the cattle population has been negligible.

2) The ongoing ~~awareness~~ implementation of a *surveillance* programme for BSE in the cattle population in accordance with Article 11.4.18.~~veterinarians, farmers, and workers involved in transportation, marketing and~~*~~slaughter~~*~~of cattle to encourage reporting of all~~*~~cases~~*~~showing clinical signs consistent with BSE in target sub-populations as defined in Articles 11.4.20. to 11.4.22.~~;

3) The history of occurrence and management of BSE *cases.*~~the compulsory notification and investigation of all cattle showing clinical signs consistent with BSE;~~

~~4)~~ ~~the examination carried out in accordance with the~~*~~Terrestrial Manual~~*~~in a~~*~~laboratory~~*~~of brain or other tissues collected within the framework of the aforementioned~~*~~surveillance~~*~~and monitoring system.~~

~~When the~~*~~risk assessment~~*~~demonstrates negligible risk, the Member Country should conduct Type B~~*~~surveillance~~*~~in accordance with Articles 11.4.20. to 11.4.22.~~

~~When the~~*~~risk assessment~~*~~fails to demonstrate negligible risk, the Member Country should conduct Type A~~*~~surveillance~~*~~in accordance with Articles 11.4.20. to 11.4.22.~~

Article 11.4.3.

**Negligible BSE risk**

The BSE risk *~~Commodities~~*~~from the cattle population~~ of a country~~,~~ or *zone* ~~or~~*~~compartment~~*~~pose a~~ can be considered to be negligible ~~risk of transmitting the BSE agent~~ if all the following conditions for the cattle population are met for at least the preceding eight years:

1) ~~a~~A *risk assessment*~~,~~ as described in ~~point 1 of~~ Article 11.4.2.~~,~~ that has identified all potential risk factors associated with the occurrence of BSE, including feeding ruminants with ruminant-derived *protein meal*, has been conducted ~~in order to identify the historical and existing risk factors~~, and the Member Country has demonstrated through documented evidence that ~~appropriate specific measures have been taken for the relevant period of time defined below to manage each identified risk;~~any identified risk factors have been adequately managed and that the risk of BSE agents being recycled within the cattle population has been negligible.

2) ~~the Member Country has demonstrated that Type B~~*~~surveillance~~*~~in accordance with Articles 11.4.20. to 11.4.22. is in place and the relevant points target, in accordance with Table 1, has been met;~~The *surveillance* provisions as described in Article 11.4.18. have been implemented.

3) EITHER:

a) there has been no *case* of BSE or, if there has been a *case*, every *case* of BSE has been demonstrated to have been imported or has been diagnosed as atypical BSE as defined in this chapter~~and has been completely destroyed, and~~

~~i)~~ ~~the criteria in points 2 to 4 of Article 11.4.2. have been complied with for at least seven years; and~~

~~ii)~~ ~~it has been demonstrated through an appropriate level of control and audit, including that of cross contamination, that for at least eight years neither~~*~~meat-and-bone meal~~*~~nor~~*~~greaves~~*~~derived from ruminants has been fed to ruminants~~;

OR

b) if there has been an indigenous *case* of classical BSE:~~, every indigenous~~*~~case~~*~~was born more than 11 years ago; and~~

either:

i) all *cases* were born before the date from which the risk of BSE agents being recycled within the cattle population has been negligible;

or

ii) where a *case* was born after that date, subsequent investigations have confirmed that any identified source of *infection* has been controlled and the risk of BSE agents being recycled within the cattle population has continued to be negligible.

~~i)~~ ~~the criteria in points 2 to 4 of Article 11.4.2. have been complied with for at least seven years; and~~

~~ii)~~ ~~it has been demonstrated through an appropriate level of control and audit, including that of cross contamination, that for at least eight years neither~~*~~meat-and-bone meal~~*~~nor~~*~~greaves~~*~~derived from ruminants has been fed to ruminants;~~

~~iii)~~ ~~all BSE~~*~~cases~~*~~, as well as:~~

* + - * ~~all cattle which, during their first year of life, were reared with the BSE~~*~~cases~~*~~during their first year of life, and which investigation showed consumed the same potentially contaminated~~*~~feed~~*~~during that period, or~~
			* ~~if the results of the investigation are inconclusive, all cattle born in the same~~*~~herd~~*~~as, and within 12 months of the birth of, the BSE~~*~~cases~~*~~,~~

~~if alive in the country,~~*~~zone~~*~~or~~*~~compartment~~*~~, are permanently identified, and their movements controlled, and, when slaughtered or at death, are completely destroyed.~~

4) Any *cases* of BSE that have been detected have been completely destroyed or disposed of to ensure that they do not enter the animal *feed* chain.

The ~~Member C~~country or the *zone* will be included in the list of countries or *zones* posing a negligible risk for BSE ~~only after the submitted evidence has been accepted by the OIE~~ in accordance with Chapter 1.6. Retention on the list requires ~~that the information for the previous 12 months on~~*~~surveillance~~*~~results and~~*~~feed~~*~~controls be re-submitted annually~~ annual confirmation of the conditions in points 1 to 4 above. Documented evidence should be resubmitted annually for points 1 to 4 above.

~~and~~Any changes in the epidemiological situation or other significant events should be ~~reported~~ notified to the OIE ~~according to the requirements in~~ in accordance with Chapter 1.1.

Article 11.4.4.

**Controlled BSE risk**

The BSE risk *~~Commodities~~*~~from the cattle population~~ of a country~~,~~ or *zone* ~~or~~*~~compartment~~*~~pose a~~ can be considered to be controlled ~~risk of transmitting the BSE agent if~~ provided all of the ~~following~~ conditions of Article 11.4.3. are met, but one or more of these conditions has not been met for the preceding eight years.~~:~~

~~1)~~ ~~a~~*~~risk assessment~~*~~, as described in point 1 of Article 11.4.2., has been conducted in order to identify the historical and existing risk factors, and the Member Country has demonstrated that appropriate measures are being taken to manage all identified risks, but these measures have not been taken for the relevant period of time;~~

~~2)~~ ~~the Member Country has demonstrated that Type A~~*~~surveillance~~*~~in accordance with Articles 11.4.20. to 11.4.22. has been carried out and the relevant points target, in accordance with Table 1, has been met; Type B~~*~~surveillance~~*~~may replace Type A~~*~~surveillance~~*~~once the relevant points target is met;~~

~~3)~~ ~~EITHER:~~

~~a)~~ ~~there has been no~~*~~case~~*~~of BSE or, if there has been a~~*~~case~~*~~, every~~*~~case~~*~~of BSE has been demonstrated to have been imported and has been completely destroyed, the criteria in points 2 to 4 of Article 11.4.2. are complied with, and it can be demonstrated through an appropriate level of control and audit, including that of cross contamination, that neither~~*~~meat-and-bone meal~~*~~nor~~*~~greaves~~*~~derived from ruminants has been fed to ruminants, but at least one of the following two conditions applies:~~

~~i)~~ ~~the criteria in points 2 to 4 of Article 11.4.2. have not been complied with for seven years;~~

~~ii)~~ ~~it cannot be demonstrated that controls over the feeding of~~*~~meat-and-bone meal~~*~~or~~*~~greaves~~*~~derived from ruminants to ruminants have been in place for eight years;~~

~~OR~~

~~b)~~ ~~there has been an indigenous~~*~~case~~*~~of BSE, the criteria in points 2 to 4 of Article 11.4.2. are complied with, and it can be demonstrated through an appropriate level of control and audit, including that of cross contamination, that neither~~*~~meat-and-bone meal~~*~~nor~~*~~greaves~~*~~derived from ruminants has been fed to ruminants;~~

~~and all BSE~~*~~cases~~*~~, as well as:~~

* + - ~~all cattle which, during their first year of life, were reared with the BSE~~*~~cases~~*~~during their first year of life, and which investigation showed consumed the same potentially contaminated~~*~~feed~~*~~during that period, or~~
		- ~~if the results of the investigation are inconclusive, all cattle born in the same~~*~~herd~~*~~as, and within 12 months of the birth of, the BSE~~*~~cases~~*~~,~~

~~if alive in the country,~~*~~zone~~*~~or~~*~~compartment~~*~~, are permanently identified, and their movements controlled, and, when slaughtered or at death, are completely destroyed.~~

The ~~Member C~~country or the *zone* will be included in the list of countries or *zones* posing a controlled risk for BSE ~~only after the submitted evidence has been accepted by the OIE~~ in accordance with Chapter 1.6. Retention on the list requires ~~that the information for the previous 12 months on~~*~~surveillance~~*~~results and~~*~~feed~~*~~controls be re-submitted annually~~ annual confirmation of the conditions in points 1 to 4 of Article 11.4.3. Documented evidence should be resubmitted annually for points 1 to 4 of Article 11.4.3.

~~and~~Any changes in the epidemiological situation or other significant events should be ~~reported~~ notified to the OIE ~~according to the requirements in~~ in accordance with Chapter 1.1.

Article 11.4.4bis.

**Compartment with negligible or controlled BSE risk**

The establishment and bilateral recognition of a *compartment* posing negligible or controlled BSE risk should follow the relevant requirements of this chapter and the principles laid down in Chapters 4.4. and 4.5.

Article 11.4.5.

**Undetermined BSE risk**

The BSE risk ~~The cattle population~~ of a country~~,~~ or *zone* ~~or~~*~~compartment~~*~~poses an~~ is considered to be undetermined ~~BSE risk~~ if it cannot be demonstrated that it meets the requirements ~~of another category~~for negligible or controlled BSE risk.

Article 11.4.5bis.

**Maintenance of BSE risk status**

Should an indigenous *case* of classical BSE in an animal born after the date from which the risk of BSE agents being recycled within the cattle population has been negligible occur in a country or *zone* recognised as posing a negligible or controlled risk for BSE, the status of the country or *zone* is maintained, provided that documented evidence regarding the outcome of subsequent investigations is submitted to the OIE within 90 days demonstrating that any identified source of *infection* has been controlled and the risk of BSE agents being recycled within the cattle population has continued to be negligible.

If no documented evidence is provided or if it is not accepted by the OIE, the provisions of Article 11.4.3. or Article 11.4.4. apply.

~~Article 11.4.6.~~

**~~Recommendations for the importation of bovine commodities from a country, zone or compartment posing a negligible BSE risk~~**

~~For all commodities from cattle not listed in point 1 of Article 11.4.1.~~

*~~Veterinary Authorities~~*~~should require the presentation of an~~*~~international veterinary certificate~~*~~attesting that the country,~~*~~zone~~*~~or~~*~~compartment~~*~~complies with the conditions in Article 11.4.3.~~

~~Article 11.4.7.~~

**~~Recommendations for the importation of cattle from a country, zone or compartment posing a negligible BSE risk but where there has been an indigenous case~~**

~~For cattle selected for export~~

*~~Veterinary Authorities~~*~~should require the presentation of an~~*~~international veterinary certificate~~*~~attesting that the animals:~~

~~1)~~ ~~are identified by a permanent identification system in such a way as to demonstrate that they are not exposed cattle as described in point 3(b)(iii) of Article 11.4.3.;~~

~~2)~~ ~~were born after the date from which the ban on the feeding of ruminants with~~*~~meat-and-bone meal~~*~~and~~*~~greaves~~*~~derived from ruminants had been effectively enforced.~~

Article 11.4.~~8~~7.

**Recommendations for ~~the~~ importation of cattle from a country, zone or compartment posing a negligible or controlled BSE risk**

~~For cattle~~

*Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

1) The cattle selected for export are identified through an *animal identification system* enabling them to be traced throughout their lifetime.

AND EITHER:

2) The cattle selected for export were born and kept in a country, *zone* or *compartment* posing a negligible or controlled BSE risk after the date from which the risk of BSE agents being recycled within the cattle population has been demonstrated to be negligible.

OR

3) It is demonstrated that the cattle selected for export have not been fed *protein meal* derived from ruminants.

~~1)~~ ~~the country,~~*~~zone~~*~~or~~*~~compartment~~*~~complies with the conditions referred to in Article 11.4.4.;~~

~~2)~~ ~~cattle selected for export are identified by a permanent identification system in such a way as to demonstrate that they are not exposed cattle as described in point 3(b) of Article 11.4.4.;~~

~~3)~~ ~~cattle selected for export were born after the date from which the ban on the feeding of ruminants with~~*~~meat-and-bone meal~~*~~and~~*~~greaves~~*~~derived from ruminants was effectively enforced.~~

Article 11.4.~~9~~8.

**Recommendations for ~~the~~ importation of cattle from a country~~,~~ or zone ~~or compartment~~ posing an undetermined BSE risk**

~~For cattle~~

*Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

1) The cattle selected for export are identified through an *animal identification* *system* enabling them to be traced throughout their lifetime.

2) It is demonstrated that the cattle selected for export have not been fed *protein meal* derived from ruminants.

~~1)~~ ~~the feeding of ruminants with~~*~~meat-and-bone meal~~*~~and~~*~~greaves~~*~~derived from ruminants has been banned and the ban has been effectively enforced;~~

~~2)~~ ~~all BSE~~*~~cases~~*~~, as well as:~~

~~a)~~ ~~all cattle which, during their first year of life, were reared with the BSE~~*~~cases~~*~~during their first year of life, and, which investigation showed consumed the same potentially contaminated~~*~~feed~~*~~during that period, or~~

~~b)~~ ~~if the results of the investigation are inconclusive, all cattle born in the same~~*~~herd~~*~~as, and within 12 months of the birth of, the BSE~~*~~cases~~*~~,~~

~~if alive in the country,~~*~~zone~~*~~or~~*~~compartment~~*~~, are permanently identified, and their movements controlled, and, when slaughtered or at death, are completely destroyed;~~

~~3)~~ ~~cattle selected for export:~~

~~a)~~ ~~are identified by a permanent identification systemin such a way as to demonstrate that they are not exposed cattle as demonstrated in point 2 above;~~

~~b)~~ ~~were born at least two  years after the date from which the ban on the feeding of ruminants with~~*~~meat-and-bone meal~~*~~and~~*~~greaves~~*~~derived from ruminants was effectively enforced.~~

~~Article 11.4.10.~~

**~~Recommendations for the importation of fresh meat and meat products from a country, zone or compartment posing a negligible BSE risk~~**

~~For~~*~~fresh meat~~*~~and~~*~~meat products~~*~~from cattle (other than those listed in point 1 of Article 11.4.1.)~~

*~~Veterinary Authorities~~*~~should require the presentation of an~~*~~international veterinary certificate~~*~~attesting that:~~

~~1)~~ ~~the country,~~*~~zone~~*~~or~~*~~compartment~~*~~complies with the conditions in Article 11.4.3.;~~

~~2)~~ ~~the cattle from which the~~*~~fresh meat~~*~~and~~*~~meat products~~*~~were derived passed ante- and post-mortem inspections;~~

~~3)~~ ~~in countries with negligible BSE risk where there have been indigenous~~*~~cases~~*~~, the cattle from which the~~*~~fresh meat~~*~~and~~*~~meat products~~*~~were derived were born after the date from which the ban on the feeding of ruminants with~~*~~meat-and-bone meal~~*~~and~~*~~greaves~~*~~derived from ruminants had been effectively enforced.~~

Article 11.4.~~11~~10.

**Recommendations for ~~the~~ importation of fresh meat and meat products from a country, zone or compartment posing a negligible or controlled BSE risk**

~~For~~*~~fresh meat~~*~~and~~*~~meat products~~*~~from cattle (other than those listed in point 1 of Article 11.4.1.)~~

*Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

1) the cattle from which the *fresh meat* and *meat products* were derived are identified through an *animal identification system*;

2) they have been subjected to an ante-mortem inspection with favourable results;

AND EITHER:

3) they were born and kept in a country, *zone* or *compartment* posing a negligible or controlled BSE risk after the date from which the risk of BSE agents being recycled within the cattle population has been demonstrated to be negligible;

OR

4) the *fresh meat* and *meat products*:

a) derived from cattle not subjected to a *stunning* process with a device injecting compressed air or gas into the cranial cavity, or to a pithing process, or to any other procedure that can contaminate blood with nervous tissue, prior to *slaughter*; and

b)were produced and handled in a manner which ensures that such products do not contain and are not contaminated with:

i) the *commodities* listed in point 1 of Article 11.4.14.;

ii)mechanically separated *meat* from the skull or from the vertebral column of cattle over 30 months of age.

~~1)~~ ~~the country,~~*~~zone~~*~~or~~*~~compartment~~*~~complies with the conditions referred to in Article 11.4.4.;~~

~~2)~~ ~~the cattle from which the~~*~~fresh meat~~*~~and~~*~~meat products~~*~~were derived passed ante- and post-mortem inspections;~~

~~3)~~ ~~cattle from which the~~*~~fresh meat~~*~~and~~*~~meat products~~*~~destined for export were derived were not subjected to a stunning process, prior to~~*~~slaughter~~*~~, with a device injecting compressed air or gas into the cranial cavity, or to a pithing process;~~

~~4)~~ ~~the~~*~~fresh meat~~*~~and~~*~~meat products~~*~~were produced and handled in a manner which ensures that such products do not contain and are not contaminated with:~~

~~i)~~ ~~the tissues listed in points 1 and  2 of Article 11.4.14.,~~

~~ii)~~ ~~mechanically separated meat from the skull and vertebral column from cattle over 30 months of age.~~

Article 11.4.~~12~~11.

**Recommendations for ~~the~~ importation of fresh meat and meat products from a country, zone or compartment posing an undetermined BSE risk**

~~For~~*~~fresh meat~~*~~and~~*~~meat products~~*~~from cattle (other than those listed in point 1 of Article 11.4.1.)~~

*Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

1) the cattle from which the *fresh meat* and *meat products* were derived are identified through an *animal identification system*;

2) it is demonstrated that the cattle from which the *fresh meat* and *meat products* were derived have not been fed *protein meal* derived from ruminants;

3) the cattle from which the *fresh meat* and *meat products* were derived:

a) were subjected to an ante-mortem inspection with favourable results;

b) were not subjected to a *stunning* process with a device injecting compressed air or gas into the cranial cavity, or to a pithing process, or to any other procedure that can contaminate blood with nervous tissue, prior to *slaughter*;

4) the *fresh meat* and *meat products* were produced and handled in a manner which ensures that such products do not contain and are not contaminated with:

a) the *commodities* listed in point 1 of Article 11.4.14.;

b) mechanically separated *meat* from the skull or from the vertebral column of cattle over 30 months of age.

~~1)~~ ~~the cattle from which the~~*~~fresh meat~~*~~and~~*~~meat products~~*~~originate:~~

~~a)~~ ~~have not been fed~~*~~meat-and-bone meal~~*~~or~~*~~greaves~~*~~derived from ruminants;~~

~~b)~~ ~~passed ante- and post-mortem inspections;~~

~~c)~~ ~~were not subjected to a stunning process, prior to~~*~~slaughter~~*~~, with a device injecting compressed air or gas into the cranial cavity, or to a pithing process;~~

~~2)~~ ~~the~~*~~fresh meat~~*~~and~~*~~meat products~~*~~were produced and handled in a manner which ensures that such products do not contain and are not contaminated with:~~

~~a)~~ ~~the tissues listed in points 1 and 3 of Article 11.4.14.,~~

~~b)~~ ~~nervous and lymphatic tissues exposed during the deboning process,~~

~~c)~~ ~~mechanically separated meat from the skull and vertebral column from cattle over 12 months of age.~~

Article 11.4.~~13~~12.

**Recommendations ~~on ruminant-derived meat-and-bone meal or greaves~~ for importation of cattle-derived protein meal from a country, zone or compartment posing a negligible BSE risk**

*Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that the cattle from which the *protein meal* was derived were identified through an *animal identification system* and were born and kept in a country, *zone* or *compartment* posing a negligible BSE risk, and

EITHER

1) they were born after the date from which the risk of BSE agents being recycled within the cattle population has been demonstrated to be negligible;

OR

2) the *protein meal* was processed in accordance with Article 11.4.17.

~~1)~~ ~~Ruminant-derived~~*~~meat-and-bone meal~~*~~or~~*~~greaves~~*~~, or any commodities containing such products, which originate from a country,~~*~~zone~~*~~or~~*~~compartment~~*~~defined in Article 11.4.3., but where there has been an indigenous~~*~~case~~*~~of BSE, should not be traded if such products were derived from cattle born before the date from which the ban on the feeding of ruminants with~~*~~meat-and-bone meal~~*~~and~~*~~greaves~~*~~derived from ruminants had been effectively enforced.~~

~~2)~~ ~~Ruminant-derived~~*~~meat-and-bone meal~~*~~or~~*~~greaves~~*~~, or any commodities containing such products, which originate from a country,~~*~~zone~~*~~or~~*~~compartment~~*~~defined in Articles 11.4.4. and 11.4.5. should not be traded between countries.~~

Article 11.4.13.

**Recommendations for importation of blood and blood products derived from cattle (except fetal blood)**

*Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

EITHER:

1) the cattle from which the blood and blood products were derived were identified through an *animal identification system* and were born and kept in a country, *zone* or *compartment* posing a negligible or controlled BSE risk after the date from which the risk of BSE agents being recycled within the cattle population has been demonstrated to be negligible;

OR

2) the blood and blood products were:

a) collected from cattle not subjected to a *stunning* process with a device injecting compressed air or gas into the cranial cavity, or to a pithing process, or to any other procedure that can contaminate the blood with nervous tissue, prior to *slaughter*;and

b) collected and processed in a manner that ensures they are not contaminated with nervous tissue.

Article 11.4.14.

**Recommendations ~~on commodities that should not be traded~~ in relation to the trade of the commodities with the greatest BSE infectivity**

Unless covered by other articles in this chapter, the following *commodities* should not be traded:

1) Distal ileum from cattle of any age; skull, brain, eyes, vertebral column and spinal cord from cattle that were at the time of *slaughter* over 30 months of age; or any *commodity* contaminated by them, for the preparation of protein products, food, *feed*, fertilisers, cosmetics, pharmaceuticals including biologicals, or medical devices, which originate from a country, *zone* or *compartment* posing:

a) an undetermined BSE risk;

b) a controlled BSE risk if the *commodities* are derived from cattle born before the date from which the risk of BSE agents being recycled within the cattle population has been demonstrated to be negligible.

2) Protein products, food, *feed*, fertilisers, cosmetics, pharmaceuticals including biologicals, or medical devices prepared using *commodities* listed in point 1 above.

3) Cattle-derived *protein meal* or any *commodities* containing such product which originate from a country, *zone* or *compartment* posing a controlled or undetermined BSE risk.

~~1)~~ ~~From cattle of any age originating from a country,~~*~~zone~~*~~or~~*~~compartment~~*~~defined in Articles 11.4.4. and 11.4.5., the following commodities, and any commodity contaminated by them, should not be traded for the preparation of food,~~*~~feed~~*~~, fertilisers, cosmetics, pharmaceuticals including biologicals, or medical devices: tonsils and distal ileum. Protein products, food,~~*~~feed~~*~~, fertilisers, cosmetics, pharmaceuticals or medical devices prepared using these commodities (unless covered by other articles in this chapter) should also not be traded.~~

~~2)~~ ~~From cattle that were at the time of~~*~~slaughter~~*~~over 30 months of age originating from a country,~~*~~zone~~*~~or~~*~~compartment~~*~~defined in Article 11.4.4., the following commodities, and any commodity contaminated by them, should not be traded for the preparation of food,~~*~~feed~~*~~, fertilisers, cosmetics, pharmaceuticals including biologicals, or medical devices: brains, eyes, spinal cord, skull and vertebral column. Protein products, food,~~*~~feed~~*~~, fertilisers, cosmetics, pharmaceuticals or medical devices prepared using these commodities (unless covered by other articles in this chapter) should also not be traded.~~

~~3)~~ ~~From cattle that were at the time of~~*~~slaughter~~*~~over 12 months of age originating from a country,~~*~~zone~~*~~or~~*~~compartment~~*~~defined in Article 11.4.5., the following commodities, and any commodity contaminated by them, should not be traded for the preparation of food,~~*~~feed~~*~~, fertilisers, cosmetics, pharmaceuticals including biologicals, or medical devices: brains, eyes, spinal cord, skull and vertebral column. Protein products, food,~~*~~feed~~*~~, fertilisers, cosmetics, pharmaceuticals or medical devices prepared using these commodities (unless covered by other articles in this chapter) should also not be traded.~~

~~Article 11.4.15.~~

**~~Recommendations for the importation of gelatine and collagen prepared from bones and intended for food or feed, cosmetics, pharmaceuticals including biologicals, or medical devices~~**

*~~Veterinary Authorities~~*~~of~~*~~importing countries~~*~~should require the presentation of an~~*~~international veterinary certificate~~*~~attesting that:~~

~~1)~~ ~~the~~*~~commodities~~*~~came from a country,~~*~~zone~~*~~or~~*~~compartment~~*~~posing a negligible BSE risk;~~

~~OR~~

~~2)~~ ~~they originate from a country,~~*~~zone~~*~~or~~*~~compartment~~*~~posing a controlled or undetermined BSE risk and are derived from cattle which have passed ante- and post-mortem inspections; and that~~

~~a)~~ ~~vertebral columns from cattle over 30 months of age at the time of~~*~~slaughter~~*~~and skulls have been excluded;~~

~~b)~~ ~~the bones have been subjected to a process which includes all of the following steps:~~

~~i)~~ ~~degreasing,~~

~~ii)~~ ~~acid demineralisation,~~

~~iii)~~ ~~acid or alkaline treatment,~~

~~iv)~~ ~~filtration,~~

~~v)~~ ~~sterilisation at >138°C for a minimum of 4 seconds,~~

~~or to an equivalent or better process in terms of infectivity reduction (such as high pressure heating).~~

Article 11.4.~~16~~15.

**Recommendations for ~~the~~ importation of tallow (other than as defined in Article 11.4.1bis.) intended for food, feed, fertilisers, cosmetics, pharmaceuticals including biologicals, or medical devices**

*Veterinary Authorities* ~~of~~*~~importing countries~~*should require the presentation of an *international veterinary certificate* attesting that the tallow:

1) ~~the tallow~~ came from a country, *zone* or *compartment* posing a negligible BSE risk; or

2) ~~it originates from a country,~~*~~zone~~*~~or~~*~~compartment~~*~~posing a controlled BSE risk,~~ is derived from cattle which have ~~passed~~ been subjected to an ante- ~~and post-~~mortem inspection~~s~~ with favourable results, and has not been prepared using the ~~tissues~~ *commodities* listed in point~~s~~ 1 ~~and 2~~ of Article 11.4.14.

Article 11.4.15bis.

**Recommendations for importation of tallow derivatives (other than as defined in Article 11.4.1bis.) intended for food, feed, fertilisers, cosmetics, pharmaceuticals including biologicals, or medical devices**

*Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that the tallow derivatives either:

1) originate from a country, *zone* or *compartment* posing a negligible BSE risk; or

2) are derived from tallow that meets the conditions referred to in Article 11.4.15.; or

3) have been produced by hydrolysis, saponification, or transesterification that uses high temperature and pressure.

Article 11.4.~~17~~16.

**Recommendations for ~~the~~ importation of dicalcium phosphate (other than as defined in Article 11.4.1bis.) intended for food, feed, fertilisers, cosmetics, pharmaceuticals including biologicals, or medical devices**

*Veterinary Authorities*~~of~~*~~importing countries~~*should require the presentation of an *international veterinary certificate* attesting that the dicalcium phosphate:

1) ~~the dicalcium phosphate~~ came from a country, *zone* or *compartment* posing a negligible BSE risk; or

2) ~~it originates from a country,~~*~~zone~~*~~or~~*~~compartment~~*~~posing a controlled or undetermined BSE risk and~~ is a ~~by-product~~ co-product of bone gelatine ~~produced according to Article 11.4.15~~.

~~Article 11.4.18.~~

**~~Recommendations for the importation of tallow derivatives (other than those made from tallow as defined in Article 11.4.1.) intended for food, feed, fertilisers, cosmetics, pharmaceuticals including biologicals, or medical devices~~**

*~~Veterinary Authorities~~*~~of~~*~~importing countries~~*~~should require the presentation of an~~*~~international veterinary certificate~~*~~attesting that:~~

~~1)~~ ~~the tallow derivatives originate from a country, zone or~~*~~compartment~~*~~posing a negligible BSE risk; or~~

~~2)~~ ~~they are derived from tallow meeting the conditions referred to in Article 11.4.16.; or~~

~~3)~~ ~~they have been produced by hydrolysis, saponification or transesterification using high temperature and pressure.~~

Article 11.4.~~19~~17.

**Procedures for ~~the~~ reduction of BSE infectivity in ~~meat-and-bone meal~~ protein meal**

The following procedure should be used to reduce the infectivity of any ~~transmissible spongiform encephalopathy~~ BSE agents ~~which~~ that may be present during the production of *~~meat-and-bone meal~~**protein meal* containing ruminant proteins~~.~~:

1) ~~T~~the raw material should be reduced to a maximum particle size of 50 mm before heating~~.~~;

2) ~~T~~the raw material should be heated under saturated steam conditions to a temperature of not less than 133°C for a minimum of 20 minutes at an absolute pressure of 3 bar.

Article 11.4.~~20~~18.

**Surveillance~~: introduction~~**

The objective of BSE *surveillance* is to detect occurrence of BSE within the cattle population.

1) BSE is a progressive, fatal disease of the nervous system of cattle that usually has an insidious onset and that is refractory to treatment. A range of clinical signs that vary in severity and between animals have been described for classical BSE:

a) progressive behavioural changes that are refractory to treatment such as increased excitability, depression, nervousness, excessive and asymmetrical ear and eye movements, apparent increased salivation, increased licking of the muzzle, teeth grinding, hypersensitivity to touch and/or sound (hyperaesthesia), tremors, excessive vocalisation, panic-stricken response and excessive alertness;

b) postural and locomotory changes such as abnormal posture (dog sitting), abnormal gait (particularly pelvic limb ataxia), low carriage of the head, head shyness, difficulty avoiding obstacles, inability to stand and recumbency;

c) generalised non-specific signs such as reduced *milk* yield, loss of body condition, weight loss, bradycardia and other disturbances of cardiac rhythm.

Some of these signs are also likely to be relevant for atypical BSE, particularly those associated with difficulty in rising and recumbency. A nervous form of atypical BSE resembling classical BSE may be observed with over-reactivity to external stimuli, unexpected startle responses and ataxia. In contrast, a dull form of atypical BSE may be observed, with dullness combined with a low head carriage and compulsive behaviour (licking, chewing, pacing in circles).

The clinical signs of BSE usually progress on a spectrum over a few weeks to several months, but on rare occasions cases can develop acutely and progress rapidly. The final stages of the disease are characterised by recumbency, coma and death.

Since these signs are not pathognomonic for either classical or atypical BSE, all Member Countries with cattle populations are likely to observe individual animals displaying clinical signs suggestive of BSE. General statements about the likely frequency of occurrence of such animals cannot be made as they will vary depending on the epidemiological situation in a particular country.

2) *Surveillance* for BSE consists of the reporting of all animals that show signs of the clinical spectrum of BSE to the *Veterinary Services* for subsequent investigation and follow-up.

In production and farming systems that allow cattle to be subjected to regular observation, it is likely thatanimals that display clinical signs suggestive of BSE will be more readily seen. Behavioural changes, which may be very subtle in the early clinical phase, are best identified by those who handle animals on a daily basis and who can monitor them closely for a progression of the signs. In production and farming systems, where cattle are not monitored as closely, situations may arise where an animal might be considered as a clinical suspect, yet if it has not been observed for a period of time, it may only be initially seen as a downer (non-ambulatory) or found dead (fallen stock).

The *surveillance* programme should take into account that the vast majority of BSE *cases* arise as single, isolated events. The concurrence of multiple animals with behavioural or neurological signs, or non-ambulatory or fallen stock is most likely associated with other causes.

The animals that lie on the clinical spectrum of BSE should be targeted for BSE *surveillance* and the following animals should be followed up with appropriate laboratory testing in accordance with the *Terrestrial Manual* to accurately confirm or rule out the presence of BSE agents:

a) those displaying some of the progressive clinical signs suggestive of BSE mentioned in point 1 of Article  11.4.18. that are refractory to treatment, and where other common causes of behavioural or neurological signs (e.g. infectious, metabolic, traumatic, neoplastic or toxic causes) have been ruled out;

b) those showing behavioural or neurological signs at ante-mortem inspection at *slaughterhouses/abattoirs*;

c) those presented as downers (non-ambulatory), with an appropriate supporting clinical history (i.e. other common causes of recumbency have been ruled out);

d)those found dead (fallen stock), with an appropriate supporting clinical history (i.e. other common causes of death have been ruled out).

3) The credibility of the *surveillance* programme is supported by:

a) ongoing awareness and training programmes to ensure that all those stakeholders involved in the rearing and production of livestock, including cattle owners and keepers, *veterinarians*, transporters and *slaughterhouse/abattoir* workers are familiar with the clinical signs suggestive of BSE as well as the statutory reporting requirements;

b) the fact that BSE is a compulsorily *notifiable disease* throughout the whole territory;

c) appropriate *laboratory* testing in accordance with the *Terrestrial Manual*;

d) robust, documented, evaluation procedures and protocols for:

‒ the identification and reporting of animals targeted for BSE *surveillance*,

‒ the determination of animals to be subjected to laboratory testing,

‒ the collection and submission of samples for laboratory testing,

‒ the follow-up epidemiological investigations for BSE positive findings.

~~1)~~ ~~Depending on the risk category of a country,~~*~~zone~~*~~or~~*~~compartment~~*~~with regard to bovine spongiform encephalopathy (BSE),~~*~~surveillance~~*~~for BSE may have one or more goals:~~

~~a)~~ ~~detecting BSE, to a pre-determined design prevalence, in a country,~~*~~zone~~*~~or~~*~~compartment~~*~~;~~

~~b)~~ ~~monitoring the evolution of BSE in a country,~~*~~zone~~*~~or~~*~~compartment~~*~~;~~

~~c)~~ ~~monitoring the effectiveness of a~~*~~feed~~*~~ban and/or other risk mitigation measures, in conjunction with auditing;~~

~~d)~~ ~~supporting a claimed BSE status;~~

~~e)~~ ~~gaining or regaining a higher BSE status.~~

~~2)~~ ~~When the BSE agent is present in a country or~~*~~zone~~*~~, the cattle population will comprise the following sectors, in order of decreasing size:~~

~~a)~~ ~~cattle not exposed to the infective agent;~~

~~b)~~ ~~cattle exposed but not infected;~~

~~c)~~ ~~infected cattle, which may lie within one of three stages in the progress of BSE:~~

~~i)~~ ~~the majority will die or be killed before reaching a stage at which BSE is detectable by current methods;~~

~~ii)~~ ~~some will progress to a stage at which BSE is detectable by testing before clinical signs appear;~~

~~iii)~~ ~~the smallest number will show clinical signs.~~

~~3)~~ ~~The BSE status of a country,~~*~~zone~~*~~or~~*~~compartment~~*~~cannot be determined only on the basis of a~~*~~surveillance~~*~~programme but should be determined in accordance with all the factors listed in Article 11.4.2. The~~*~~surveillance~~*~~programme should take into account the diagnostic limitations associated with the above sectors and the relative distributions of infected cattle among them.~~

~~4)~~ ~~With respect to the distribution and expression of the BSE agent within the sectors described above, the following four subpopulations of cattle have been identified for~~*~~surveillance~~*~~purposes:~~

~~a)~~ ~~cattle over 30 months of age displaying behavioural or clinical signs consistent with BSE (clinical suspects);~~

~~b)~~ ~~cattle over 30 months of age that are non-ambulatory, recumbent, unable to rise or to walk without assistance; cattle over 30 months of age sent for emergency~~*~~slaughter~~*~~or condemned at ante-mortem inspection (casualty or emergency~~*~~slaughter~~*~~or downer cattle);~~

~~c)~~ ~~cattle over 30 months of age which are found dead or killed on farm, during transport or at an~~*~~slaughterhouse/abattoir~~*~~(fallen stock);~~

~~d)~~ ~~cattle over 36 months of age at routine~~*~~slaughter~~*~~.~~

~~5)~~ ~~A gradient is used to describe the relative value of~~*~~surveillance~~*~~applied to each subpopulation.~~*~~Surveillance~~*~~should focus on the first subpopulation, but investigation of other subpopulations will help to provide an accurate assessment of the BSE situation in the country,~~*~~zone~~*~~or~~*~~compartment~~*~~. This approach is consistent with Articles 11.4.20. to 11.4.22.~~

~~6)~~ ~~When establishing a~~*~~surveillance~~*~~strategy, authorities need to take into account the inherent difficulties of obtaining samples on farm, and overcome them. These difficulties include higher cost, the necessity to educate and motivate owners, and counteracting potentially negative socio-economic implications.~~

~~Article 11.4.21.~~

**~~Surveillance: description of cattle subpopulations~~**

~~1.~~ ~~Cattle over 30 months of age displaying behavioural or clinical signs consistent with BSE (clinical suspects)~~

~~Cattle affected by illnesses that are refractory to treatment, and displaying progressive behavioural changes such as excitability, persistent kicking when milked, changes in~~*~~herd~~*~~hierarchical status, hesitation at doors, gates and barriers, as well as those displaying progressive neurological signs without signs of infectious illness are candidates for examination. These behavioural changes, being very subtle, are best identified by those who handle animals on a daily basis. Since BSE causes no pathognomonic clinical signs, all Member Countries with cattle populations will observe individual animals displaying clinical signs consistent with BSE. It should be recognised that~~*~~cases~~*~~may display only some of these signs, which may also vary in severity, and such animals should still be investigated as potential BSE affected animals. The rate at which such suspicious cases are likely to occur will differ among epidemiological situations and cannot therefore be predicted reliably.~~

~~This subpopulation is the one exhibiting the highest prevalence. The accurate recognition, reporting and classification of such animals will depend on the ongoing owner/veterinarian awareness programme. This and the quality of the investigation and~~*~~laboratory~~*~~examination systems (Article 11.4.2.), implemented by the~~*~~Veterinary Services~~*~~, are essential for the credibility of the~~*~~surveillance~~*~~system.~~

~~2.~~ ~~Cattle over 30 months of age that are non-ambulatory, recumbent, unable to rise or to walk without assistance; cattle over 30 months of age sent for emergency slaughter or condemned at ante-mortem inspection (casualty or emergency slaughter, or downer cattle)~~

~~These cattle may have exhibited some of the clinical signs listed above which were not recognised as being consistent with BSE. Experience in Member Countries where BSE has been identified indicates that this subpopulation is the one demonstrating the second highest prevalence. For that reason, it is the second most appropriate population to target in order to detect BSE.~~

~~3.~~ ~~Cattle over 30 months of age which are found dead or killed on farm, during transport or at a slaughterhouse/abattoir (fallen stock)~~

~~These cattle may have exhibited some of the clinical signs listed above prior to death, but were not recognised as being consistent with BSE. Experience in Member Countries where BSE has been identified indicates that this subpopulation is the one demonstrating the third highest prevalence.~~

~~4.~~ ~~Cattle over 36 months of age at routine slaughter~~

~~Experience in Member Countries where BSE has been identified indicates that this subpopulation is the one demonstrating the lowest prevalence. For that reason, it is the least appropriate population to target in order to detect BSE. However, sampling in this subpopulation may be an aide in monitoring the progress of the epizootic and the efficacy of control measures applied, because it offers continuous access to a cattle population of known class, age structure and geographical origin. Testing of routine slaughter cattle 36 months of age or less is of relatively very little value (Table 2).~~

~~Article 11.4.22.~~

**~~Surveillance activities~~**

~~In order to implement efficiently a~~*~~surveillance~~*~~strategy for BSE, a Member Country should use documented records or reliable estimates of the age distribution of the adult cattle population and the number of cattle tested for BSE stratified by age and by subpopulation within the country,~~*~~zone~~*~~or~~*~~compartment~~*~~.~~

~~The approach assigns ‘point values’ to each sample, based on the subpopulation from which it was collected and the likelihood of detecting infected cattle in that subpopulation. The number of points a sample is assigned is determined by the subpopulation from which the sample is collected and the age of the animal sampled. The total points accumulation is then periodically compared to the target number of points for a country,~~*~~zone~~*~~or~~*~~compartment~~*~~.~~

~~A~~*~~surveillance~~*~~strategy should be designed to ensure that samples are representative of the~~*~~herd~~*~~of the country,~~*~~zone~~*~~or~~*~~compartment~~*~~, and include consideration of demographic factors such as production type and geographic location, and the potential influence of culturally unique husbandry practices. The approach used and the assumptions made should be fully documented, and the documentation retained for seven years.~~

~~The points targets and~~*~~surveillance~~*~~point values in this chapter were obtained by applying the following factors to a statistical model:~~

~~1)~~ ~~the design prevalence for Type A or Type B~~*~~surveillance~~*~~;~~

~~2)~~ ~~a confidence level of 95%;~~

~~3)~~ ~~the pathogenesis, and pathological and clinical expression of BSE:~~

~~a)~~ ~~sensitivity of diagnostic methods used;~~

~~b)~~ ~~relative frequency of expression by age;~~

~~c)~~ ~~relative frequency of expression within each subpopulation;~~

~~d)~~ ~~interval between pathological change and clinical expression;~~

~~4)~~ ~~demographics of the cattle population, including age distribution and population size;~~

~~5) influence of BSE on culling or attrition of animals from the cattle population via the four subpopulations;~~

~~6)~~ ~~percentage of infected animals in the cattle population which are not detected.~~

~~Although the procedure accepts very basic information about a cattle population, and can be used with estimates and less precise data, careful collection and documentation of the data significantly enhance their value. Since samples from clinical suspect animals provide many times more information than samples from healthy or dead-of-unknown-cause animals, careful attention to the input data can substantially decrease the procedure’s cost and the number of samples needed. The essential input data are:~~

~~7)~~ ~~cattle population numbers stratified by age;~~

~~8)~~ ~~the number of cattle tested for BSE stratified by age and by subpopulation.~~

~~This chapter utilises Tables 1 and 2 to determine a desired~~*~~surveillance~~*~~points target and the point values of~~*~~surveillance~~*~~samples collected.~~

~~Within each of the subpopulations above in a country,~~*~~zone~~*~~or~~*~~compartment~~*~~, a Member Country may wish to target cattle identifiable as imported from countries or~~*~~zones~~*~~not free from BSE and cattle which have consumed potentially contaminated feedstuffs from countries or~~*~~zones~~*~~not free from BSE.~~

~~All clinical suspects should be investigated, regardless of the number of points accumulated. In addition, animals from the other subpopulations should be tested.~~

~~1.~~ ~~Type A surveillance~~

~~The application of Type A~~*~~surveillance~~*~~will allow the detection of BSE around a design prevalence of at least one case per 100,000 in the adult cattle population in the country,~~*~~zone~~*~~or~~*~~compartment~~*~~of concern, at a confidence level of 95%.~~

~~2.~~ ~~Type B surveillance~~

~~The application of Type B~~*~~surveillance~~*~~will allow the detection of BSE around a design prevalence of at least one case per 50,000 in the adult cattle population in the country,~~*~~zone~~*~~or~~*~~compartment~~*~~of concern, at a confidence level of 95%.~~

~~Type B~~*~~surveillance~~*~~may be carried out by countries,~~*~~zones~~*~~or~~*~~compartments~~*~~of negligible BSE risk status (Article 11.4.3.) to confirm the conclusions of the~~*~~risk assessment~~*~~, for example by demonstrating the effectiveness of the measures mitigating any risk factors identified, through~~*~~surveillance~~*~~targeted to maximise the likelihood of identifying failures of such measures.~~

~~Type B~~*~~surveillance~~*~~may also be carried out by countries,~~*~~zones~~*~~or~~*~~compartments~~*~~of controlled BSE risk status (Article 11.4.4.), following the achievement of the relevant points target using Type A~~*~~surveillance~~*~~, to maintain confidence in the knowledge gained through Type A~~*~~surveillance~~*~~.~~

~~3.~~ ~~Selecting the points target~~

~~The~~*~~surveillance~~*~~points target should be selected from Table 1, which shows target points for adult cattle populations of different sizes. The size of the adult cattle population of a country,~~*~~zone~~*~~or~~*~~compartment~~*~~may be estimated or may be set at one million because, for statistical reasons, one million is the point beyond which sample size does not further increase with population size.~~

### ~~Table 1. Points targets for different adult cattle population sizes in a country, zone or compartment.~~

|  |
| --- |
| **~~Points targets for country, zone or compartment~~** |
| ~~Adult cattle population size (24 months and older)~~ | ~~Type A surveillance~~ | ~~Type B surveillance~~ |
| ~~>1,000,000~~ | ~~300,000~~ | ~~150,000~~ |
| ~~1,000,000~~ | ~~238,400~~ | ~~119,200~~ |
| ~~900,001-1,000,000~~ | ~~214,600~~ | ~~107,300~~ |
| ~~800,001-900,000~~ | ~~190,700~~ | ~~95,350~~ |
| ~~700,001-800,000~~ | ~~166,900~~ | ~~83,450~~ |
| ~~600,001-700,000~~ | ~~143,000~~ | ~~71,500~~ |
| ~~500,001-600,000~~ | ~~119,200~~ | ~~59,600~~ |
| ~~400,001-500,000~~ | ~~95,400~~ | ~~47,700~~ |
| ~~300,001-400,000~~ | ~~71,500~~ | ~~35,750~~ |
| ~~200,001-300,000~~ | ~~47,700~~ | ~~23,850~~ |
| ~~100,001-200,000~~ | ~~22,100~~ | ~~11,500~~ |
| ~~90,001-100,000~~ | ~~19,900~~ | ~~9,950~~ |
| ~~80,001-90,000~~ | ~~17,700~~ | ~~8,850~~ |
| ~~70,001-80,000~~ | ~~15,500~~ | ~~7,750~~ |
| ~~60,001-70,000~~ | ~~13,300~~ | ~~6,650~~ |
| ~~50,001-60,000~~ | ~~11,000~~ | ~~5,500~~ |
| ~~40,001-50,000~~ | ~~8,800~~ | ~~4,400~~ |
| ~~30,001-40,000~~ | ~~6,600~~ | ~~3,300~~ |
| ~~20,001-30,000~~ | ~~4,400~~ | ~~2,200~~ |
| ~~10,001-20,000~~ | ~~2,100~~ | ~~1,050~~ |
| ~~9,001-10,000~~ | ~~1,900~~ | ~~950~~ |
| ~~8,001-9,000~~ | ~~1,600~~ | ~~800~~ |
| ~~7,001-8,000~~ | ~~1,400~~ | ~~700~~ |
| ~~6,001-7,000~~ | ~~1,200~~ | ~~600~~ |
| ~~5,001-6,000~~ | ~~1,000~~ | ~~500~~ |
| ~~4,001-5,000~~ | ~~800~~ | ~~400~~ |
| ~~3,001-4,000~~ | ~~600~~ | ~~300~~ |
| ~~2,001-3,000~~ | ~~400~~ | ~~200~~ |
| ~~1,001-2,000~~ | ~~200~~ | ~~100~~ |

~~4.~~ ~~Determining the point  values of samples collected~~

~~Table 2 can be used to determine the point values of the~~*~~surveillance~~*~~samples collected. The approach assigns point values to each sample according to the likelihood of detecting~~*~~infection~~*~~based on the subpopulation from which the sample was collected and the age of the animal sampled. This approach takes into account the general principles of~~*~~surveillance~~*~~described in Chapter 1.4. and the epidemiology of BSE.~~

~~Because precise aging of the animals that are sampled may not be possible, Table 2 combines point values into five age categories. The point estimates for each category were determined as an average for the age range comprising the group. The age groups were selected on their relative likelihoods of expressing BSE according to scientific knowledge of the incubation of the disease and the world BSE experience. Samples may be collected from any combination of subpopulations and ages but should reflect the demographics of the cattle~~*~~herd~~*~~of the country,~~*~~zone~~*~~or~~*~~compartment~~*~~. In addition, Member Countries should sample at least three of the four subpopulations.~~

### ~~Table 2. Surveillance point values for samples collected from animals in the given subpopulation and age category.~~

|  |
| --- |
| **~~Surveillance subpopulation~~** |
| **~~Routine slaughter~~**[**~~1~~**](#_bookmark12) | **~~Fallen stock~~**[**~~2~~**](#_bookmark12) | **~~Casualty slaughter~~**[**~~3~~**](#_bookmark12) | **~~Clinical suspect~~**[**~~4~~**](#_bookmark12) |
| **~~Age > 1 year and <2 years~~** |
| ~~0.01~~ | ~~0.2~~ | ~~0.4~~ | ~~N/A~~ |
| **~~Age > 2 years and <4 years (young adult)~~** |
| ~~0.1~~ | ~~0.2~~ | ~~0.4~~ | ~~260~~ |
| **~~Age > 4 years and <7 years (middle adult)~~** |
| ~~0.2~~ | ~~0.9~~ | ~~1.6~~ | ~~750~~ |
| **~~Age > 7 years and <9 years (older adult)~~** |
| ~~0.1~~ | ~~0.4~~ | ~~0.7~~ | ~~220~~ |
| **~~Age > 9 years~~** |
| ~~0.0~~ | ~~0.1~~ | ~~0.2~~ | ~~45~~ |

~~If a country,~~*~~zone~~*~~or~~*~~compartment~~*~~determines, based on the demographics and epidemiological characteristics of its cattle population, that precise classification of the subpopulations ‘casualty or emergency slaughter, or downer cattle’ and ‘fallen stock’ is not possible, these subpopulations may be combined. In such a case, the~~*~~surveillance~~*~~point values accorded to the combined subpopulation would be that of ‘fallen stock’.~~

~~The total points for samples collected may be accumulated over a period of a maximum of seven consecutive years to achieve the target number of points determined in Table 1.~~

*~~Surveillance~~*~~points remain valid for seven years (the 95th percentile of the incubation period).~~

~~Article 11.4.23.~~

**~~BSE risk assessment: introduction~~**

~~The first step in determining the BSE risk status of the cattle population of a country or~~*~~zone~~*~~is to conduct a~~*~~risk assessment~~*~~(reviewed annually), based on Section 2. of this~~*~~Terrestrial Code~~*~~, identifying all potential factors for BSE occurrence and their historic perspective.~~

~~1.~~ ~~Entry assessment~~

~~Entry assessment consists of assessing the likelihood that a BSE agent has been introduced via the importation of the following~~*~~commodities~~*~~potentially contaminated with a BSE agent:~~

~~a)~~ *~~meat-and-bone meal~~*~~or~~*~~greaves~~*~~;~~

~~b)~~ ~~live animals;~~

~~c)~~ ~~animal~~*~~feed~~*~~and~~*~~feed ingredients~~*~~;~~

~~d)~~ ~~products of animal origin for human consumption.~~

~~2.~~ ~~Exposure assessment~~

~~Exposure assessment consists of assessing the likelihood of exposure of the BSE agent to cattle, through a consideration of the following:~~

~~a)~~ ~~epidemiological situation concerning BSE agents in the country or~~*~~zone~~*~~;~~

~~b)~~ ~~recycling and amplification of the BSE agent through consumption by cattle of~~*~~meat-and-bone meal~~*~~or~~*~~greaves~~*~~of ruminant origin, or other~~*~~feed~~*~~or~~*~~feed ingredients~~*~~contaminated with these;~~

~~c)~~ ~~the origin and use of ruminant carcasses (including fallen stock), by-products and~~*~~slaughterhouse/abattoir~~*~~waste, the parameters of the rendering processes and the methods of animal~~*~~feed~~*~~manufacture;~~

~~d)~~ ~~implementation and enforcement of~~*~~feed~~*~~bans, including measures to prevent cross-contamination of animal~~*~~feed~~*~~; thorough epidemiological investigations of any indigenous~~*~~case~~*~~born after the date of the implementation of~~*~~feed~~*~~bans should be conducted.~~

~~The following recommendations are intended to assist~~*~~Veterinary Services~~*~~in conducting such a~~*~~risk assessment~~*~~. They provide guidance on the issues that need to be addressed when conducting a country-based assessment of BSE risk. They apply equally to self-assessment in preparation of dossiers for categorisation of countries. The recommendations are supported by greater detail in the questionnaire used for the submission of data for country assessment.~~

~~Article 11.4.24.~~

**~~The potential for the entry of the BSE agent through the importation of meat-and-bone meal or greaves~~**

~~This point is irrelevant if the exposure assessment outlined below in Article 11.4.27. indicates that~~*~~meat-and-bone meal~~*~~or~~*~~greaves~~*~~has not been fed, either deliberately or accidentally, in the past eight years. Nevertheless, documentation should be provided on the control systems (including relevant legislation) in place to ensure that~~*~~meat-and-bone meal~~*~~or~~*~~greaves~~*~~has not been fed to ruminants.~~

*~~Assumption:~~*~~That~~*~~meat-and-bone meal~~*~~or~~*~~greaves~~*~~of ruminant origin plays the only significant role in BSE transmission.~~

*~~Question to be answered:~~*~~Has~~*~~meat-and-bone meal~~*~~,~~*~~greaves~~*~~, or feedstuffs containing either been imported within the past eight years? If so, where from and in what quantities?~~

*~~Rationale:~~*~~Knowledge of the origin of~~*~~meat-and-bone meal~~*~~,~~*~~greaves~~*~~or feedstuffs containing either~~*~~meat-and-bone meal~~*~~or~~*~~greaves~~*~~, is necessary to assess the likelihood of entry of BSE agent.~~*~~Meat-and-bone meal~~*~~and~~*~~greaves~~*~~originating in countries of high BSE risk pose a higher likelihood of entry than that from low risk countries.~~*~~Meat-and-bone meal~~*~~and~~*~~greaves~~*~~originating in countries of unknown BSE risk pose an unknown likelihood of entry.~~

*~~Evidence required:~~*

~~‒~~ ~~Documentation to support claims that~~*~~meat-and-bone meal~~*~~,~~*~~greaves~~*~~or feedstuffs containing either~~*~~meat-and-bone meal~~*~~or~~*~~greaves~~*~~have not been imported, OR~~

~~‒~~ ~~Where~~*~~meat-and-bone meal~~*~~,~~*~~greaves~~*~~or feedstuffs containing them have been imported, documentation of country of origin and, if different, the country of export.~~

~~‒~~ ~~Documentation on annual volume, by country of origin, of~~*~~meat~~*~~,~~*~~greaves~~*~~or feedstuffs containing them imported during the past eight years.~~

~~‒~~ ~~Documentation describing the composition (on a species and class of stock basis) of the imported~~*~~meat-and-bone meal~~*~~,~~*~~greaves~~*~~or feedstuffs containing them.~~

~~‒~~ ~~Documentation, from the country of production, supporting why the rendering processes used to produce~~*~~meat-and-bone meal~~*~~,~~*~~greaves~~*~~or feedstuffs containing them would have inactivated, or significantly reduced the titre of BSE agent, should it be present.~~

~~‒~~ ~~Documentation describing the fate of imported~~*~~meat-and-bone meal~~*~~and~~*~~greaves~~*~~.~~

~~Article 11.4.25.~~

**~~The potential for the entry of the BSE agent through the importation of live animals potentially infected with BSE~~**

*~~Assumptions:~~*

~~‒ Countries which have imported ruminants from countries infected with BSEs are more likely to experience BSE.~~

~~‒~~ ~~Cattle pose the only known risk although other species are under study.~~

~~‒ Animals imported for breeding may pose a greater risk than animals imported for~~*~~slaughter~~*~~because of the hypothetical risk of maternal transmission and because they are kept to a greater age than animals imported for~~*~~slaughter~~*~~.~~

~~‒ Risk is influenced by the date at which imports occurred, relative to the BSE status of the country of origin.~~

~~‒ Risk is proportional to volume of imports (Article 2.1.3.).~~

*~~Question to be answered:~~*~~Have live animals been imported within the past seven years?~~

*~~Rationale:~~*~~The likelihood of entry is dependent on:~~

~~‒ country of origin and its BSE status, which will change as more data become available; this may result from the detection of clinical disease, or following active~~*~~surveillance~~*~~, or assessment of geographical BSE risk;~~

~~‒ feeding and management of the animals in the country of origin;~~

~~‒ use to which the~~*~~commodity~~*~~has been put as apart from representing risk of developing clinical disease, the~~*~~slaughter~~*~~, rendering and recycling in~~*~~meat-and-bone meal~~*~~of imported animals represents a potential route of exposure of indigenous livestock even if~~*~~meat-and-bone meal~~*~~and~~*~~greaves~~*~~, or feedstuffs containing them, have not been imported;~~

~~‒ species;~~

~~‒ dairy versus meat breeds, where there are differences in exposure in the country of origin because feeding practices result in greater exposure of one category;~~

~~‒ age at~~*~~slaughter~~*~~.~~

*~~Evidence required:~~*

~~‒ Documentation on the country of origin of imports. This should identify the country of breeding of animals, the length of time they lived in that country and of any other country in which they have resided during their lifetime.~~

~~‒ Documentation describing origins, species and volume of imports.~~

~~‒ Documentation describing the fate of imported animals, including their age at~~*~~slaughter~~*~~.~~

~~‒ Documentation demonstrating that risks are periodically reviewed in light of evolving knowledge on the BSE status of the country of origin.~~

~~Article 11.4.26.~~

**~~The potential for the entry of the BSE agent through the importation of products of animal origin potentially infected with BSE~~**

*~~Assumptions:~~*

~~‒ Semen, embryos, hides and skins or milk are not considered to play a role in the transmission of BSE.~~

~~‒ Countries which have imported products of animal origin from countries with BSEs are more likely to experience BSE.~~

~~‒ Risk is influenced by the date at which imports occurred, relative to the BSE status of the country of origin.~~

~~‒ Risk is proportional to volume of imports (Article 2.1.3.).~~

*~~Question to be answered:~~*~~What products of animal origin have been imported within the past seven years?~~

*~~Rationale:~~*~~The likelihood of entry is dependent on:~~

~~‒ the species of origin of the animal products and whether these products contain tissues known to contain BSE infectivity (Article 11.4.14.);~~

~~‒ country of origin and its BSE status, which will change as more data become available; this may result from the detection of clinical disease, or following active~~*~~surveillance~~*~~, or assessment of geographical BSE risk;~~

~~‒ feeding and management of the animals in the country of origin;~~

~~‒ use to which the~~*~~commodity~~*~~has been put as apart from representing risk of developing clinical disease, the~~*~~slaughter~~*~~, rendering and recycling in~~*~~meat-and-bone meal~~*~~of imported animals represents a potential route of exposure of indigenous livestock even if~~*~~meat-and-bone meal~~*~~and~~*~~greaves~~*~~, or feedstuffs containing them, have not been imported;~~

~~‒ species;~~

~~‒ dairy versus meat breeds, where there are differences in exposure in the country of origin because feeding practices result in greater exposure of one category;~~

~~‒ age at~~*~~slaughter~~*~~.~~

*~~Evidence required:~~*

~~Documentation on the country of origin of imports. This should identify the country of breeding of animals, the length of time they lived in that country and of any other country in which they have resided during their lifetime.~~

~~‒ Documentation describing origins, species and volume of imports.~~

~~‒ Documentation describing the end use of imported animal products, and the disposal of waste.~~

~~‒ Documentation demonstrating that risks are periodically reviewed in light of evolving knowledge on the BSE status of the country of origin.~~

~~Article 11.4.27.~~

**~~The potential for the exposure of cattle to the BSE agent through consumption of meat-and-bone meal or greaves of ruminant origin~~**

*~~Assumptions:~~*

~~‒ That the consumption by bovines of~~*~~meat-and-bone meal~~*~~or~~*~~greaves~~*~~of ruminant origin plays the only significant role in BSE transmission.~~

~~‒ That commercially-available products of animal origin used in animal~~*~~feed~~*~~may contain~~*~~meat-and-bone meal~~*~~or~~*~~greaves~~*~~of ruminant origin.~~

~~‒ Milk and blood are not considered to play a role in the transmission of BSE.~~

*~~Question to be answered:~~*~~Has~~*~~meat-and-bone meal~~*~~or~~*~~greaves~~*~~of ruminant origin been fed to cattle within the past eight years (see Articles 11.4.3. and 11.4.4.)?~~

~~Rationale:  If cattle have not been fed products of animal origin (other than milk or blood) potentially containing~~*~~meat-and-bone meal~~*~~or~~*~~greaves~~*~~of ruminant origin within the past eight years,~~*~~meat-and-bone meal~~*~~and~~*~~greaves~~*~~can be dismissed as a risk.~~

~~Article 11.4.28.~~

**~~The origin of animal waste, the parameters of the rendering processes and the methods of animal feed production~~**

*~~Assumptions:~~*

~~‒ BSE has a long~~*~~incubation period~~*~~and insidious onset of signs, so~~*~~cases~~*~~may escape detection.~~

~~‒ Pre-clinical BSE infectivity cannot reliably be detected by any method and may enter rendering, in particular if specified risk materials are not removed.~~

~~‒ Tissues most likely to contain high titres of BSE infectivity (brain, spinal cord, eyes) may not be harvested for human consumption and may be rendered.~~

~~‒ BSE may manifest in sudden death, chronic disease, or recumbency, and may be presented as fallen stock or materials condemned as unfit for human consumption.~~

~~‒ BSE agent survival in rendering is affected by the method of processing. Adequate rendering processes are described in Article 11.4.19.~~

~~‒ BSE agent is present at much higher titres in central nervous system and reticulo-endothelial tissues (so-called ‘Specified Risk Materials’, or SRM).~~

*~~Question to be answered:~~*~~How has animal waste been processed over the past eight years?~~

*~~Rationale:~~*~~If potentially infected animals or contaminated materials are rendered, there is a risk that the resulting~~*~~meat-and-bone meal~~*~~could retain BSE infectivity.~~

~~Where~~*~~meat-and-bone meal~~*~~is utilised in the production of any animal~~*~~feed~~*~~, the risk of cross-contamination exists.~~

~~Evidence required:~~

~~‒ Documentation describing the collection and disposal of fallen stock and materials condemned as unfit for human consumption.~~

~~‒ Documentation describing the definition and disposal of specified risk material, if any.~~

~~‒ Documentation describing the rendering process and parameters used to produce~~*~~meat-and-bone meal~~*~~and~~*~~greaves~~*~~.~~

~~‒ Documentation describing methods of animal~~*~~feed~~*~~production, including details of~~*~~ingredients~~*~~used, the extent of use of~~*~~meat-and-bone meal~~*~~in any livestock~~*~~feed~~*~~, and measures that prevent cross-contamination of cattle~~*~~feed~~*~~with~~*~~ingredients~~*~~used in monogastric~~*~~feed~~*~~.~~

~~‒ Documentation describing monitoring and enforcement of the above.~~

~~Article 11.4.29.~~

**~~Conclusions of the risk assessment~~**

~~The overall risk of BSE in the cattle population of a country or~~*~~zone~~*~~is proportional to the level of known or potential exposure to BSE infectivity and the potential for recycling and amplification of the infectivity through livestock feeding practices. For the~~*~~risk assessment~~*~~to conclude that the cattle population of a country or~~*~~zone~~*~~is free from BSE risk, it should have demonstrated that appropriate measures have been taken to manage any risks identified.~~

1. See point 4 of Article 11.4.21.
2. See point 3 of Article 11.4.21.
3. See point 2 of Article 11.4.21.
4. See point 1 of Article 11.4.2